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<120> PREPARATION OF RECOMBINANT ROTAVIRUS PROTEINS IN MILK OF
TRANSGENIC NON-HUMAN MAMMALS

<130> D21684

<150> EP 04/290 589

<151> 2004-03-04

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<170> PatentIn version 3.3

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<212> DNA

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<223> VP2 strain RF open reading frame

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<210> 6

<211> 2797

<212> DNA

<213> Artificial sequence

<220>

<223> VP2 strain RF open reading frame, modified sequence

and with signal peptide

<400> 6

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<210> 7

<211> 783

<212> DNA

<213> Porcine rotavirus

<220>

<223> VP4 gene for capsid protein, partial cds

<400> 7

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<210> 8

<211> 799

<212> DNA

<213> Human rotavirus

<220>

<223> P1B VP4 gene, partial cds

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<211> 875

<212> DNA

<213> Human rotavirus

<220>

<223> P3 truncated VP4 protein gene, partial cds

<400> 9

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<210> 10
 <211> 1194
 <212> DNA
 <213> rotavirus

<220>
 <223> VP6 strain RF open reading frame

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<210> 11
 <211> 1194
 <212> DNA
 <213> Artificial sequence

<220>
 <223> VP6 strain RF open reading frame, modified sequence

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<210> 12

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

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<210> 13

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 13

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<210> 14

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 14

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gcccgcata	caattgatta	ttttgtagat	tttgtagata	atgtatgtat	ggacgaaatg	300
gtagagaaat	cacaaagaaa	tggaattgca	ccacaatcag	attcacttat	aaagttatca	360
ggcattaaat	ttaaaagaat	aaattttgac	cagtcatcag	aatacataga	gaactggaat	420
ttgcaaaaata	gaagacaaag	aacgggtttt	acatttcata	aaccaaacat	tttcccttat	480
tcagcttcat	tcacgttgaa	cagatcacag	cccgtcatg	ataacctgat	gggtacgatg	540
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gcgccagcta	atacgcaaca	atttgagcat	attgtacagc	ttcgaagggt	gttgactaca	660
gctacaataa	ctctttttacc	agatgcagaa	agatttagtt	ttccaagagt	gattacttca	720
gctgacggag	cgactacatg	gtacttcaat	ccagtgattc	ttagaccaa	taacgttgaa	780
atagagtttc	tactaaacgg	gcagataata	aatacttacc	aagcaagatt	tggaaacgatc	840
atagctagaa	attttgatac	aattagattg	tcatttcagt	tgatgagacc	accaaatatg	900
acaccagcgg	tagcggcggt	atttccaaat	gcgagccat	ttgaacatca	cgcaacagta	960
ggactcacgc	ttagaattga	atctgcagtt	tgtgaatcag	tacttgccga	cgcaagcgaa	1020
acaatgctag	cacaagtgac	atctgttaga	caagaatacg	cgataccagt	tggaccagtt	1080
tttccaccag	gtatgcagtg	gactgatttg	atcactaact	attcaccatc	tagagaggat	1140
aacttgcagc	gtgtattttac	agtggcttcc	attagaagca	tgcttgtcaa	atga	1194

<210> 15

<211> 1194

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence

<400> 15

atggatgtcc	tgtactcctt	gtcaaaaact	cttaaagatg	ctagagacaa	aattgtcgaa	60
ggcacattat	actcccaagt	cagtgatcta	attcaacaat	ttaatcaaat	gataattact	120
atgaatggaa	atgagttcca	aactggagga	attggtaatc	taccgattag	aaattggaat	180
tttgattttg	gattacttgg	aacaactcta	ctaaatttag	atgctaacta	cgtcgaaacg	240
gcccgcata	caattgatta	ttttgtagat	tttgtagata	atgtatgtat	ggacgaaatg	300
gtagagaaat	cacaaagaaa	tggaattgca	ccacaatcag	attcacttat	aaagttatca	360
ggcattaaat	ttaaaagaat	aaattttgac	cagtcatcag	aatacataga	gaactggaat	420
ttgcaaaaata	gaagacaaag	aacgggtttt	acatttcata	aaccaaacat	tttcccttat	480
tcagcttcat	tcacgttgaa	cagatcacaa	cccgtcatg	ataacttgat	gggtacgatg	540
tggctcaatg	cgggatcaga	aattcaggtc	gctggattcg	actactcatg	tgcaataaac	600
gcgccagcta	atacgcaaca	atttgagcat	attgtacagc	ttcgaagggt	gttgactaca	660
gctacaataa	ctctttttacc	agatgcagaa	agatttagtt	ttccaagagt	gattacttca	720

gctgacggag	cgactacatg	gtacttcaat	ccagtgatc	ttagaccaa	taacgttgaa	780
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atagctagaa	attttgatac	aattagattg	tcattttcagt	tgatgagacc	accaaataatg	900
acaccagcgg	tagcggcgtt	atttccaaat	gcgcagccat	ttgaacatca	cgcaacagta	960
ggactcacgc	ttagaattga	atctgcagtt	tgtgaatcag	tacttgccga	cgcaagcgaa	1020
acaatgctag	cacaagtgac	atctgttaga	caagaatacg	cgataccagt	tggaaccagtt	1080
tttccaccag	gtatgcagtg	gactgatttg	atcactaact	attcaccatc	tagagaggat	1140
aacttgcagc	gtgtattttac	agtggtcttc	attagaagca	tgcttgtcaa	atga	1194

<210> 16

<211> 1348

<212> DNA

<213> Artificial sequence

<220>

<223> VP6 strain RF open reading frame, modified sequence,
with signal peptide

<400> 16

gcgcgcggat	cccaaggccc	aactccccga	accactcagg	gtcctgtgga	cagctcacct	60
agccgccatg	gctccaggct	cccggacgtc	cctgctcctg	gcttttgccc	tgctctgcct	120
gccctggctt	caggaggctg	gcgcgcgtgat	ggatgtcctg	tactccctct	caaaaactct	180
taaagatgct	agagacaaaa	ttgtcgaagg	cacactgtac	tcccaagtca	gtgatctcat	240
tcagcagttt	aatcagatga	ttattactat	gaatggcaat	gagttccaga	ctggaggcat	300
tggaatctc	cccattagaa	attggaattt	tgatttttga	ctccttgga	caactctgct	360
caatctggat	gctaactacg	tcgaaacggc	ccgcaataca	attgattatt	ttgtcgattt	420
tgtggataat	gtctgtatgg	acgaaatgg	tagagaatca	cagagaaatg	gcattgcacc	480
acagtcagat	tcacttatca	agctctcagg	cattaaattc	aaacgcatta	attttgacca	540
gtcatcagaa	tacatcgaga	actggaatct	gcaaaataga	agacagagaa	cgggattcac	600
atttcataaa	ccaaacattt	tcccttattc	cgcttccttc	acgctccagc	gctcacagcc	660
cgctcatgat	aacctgatgg	gcacgatgtg	gctcaatgct	ggctcagaaa	tccaggctgc	720
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tgtgcagctt	agaagggtgc	tcactacagc	tacaatcact	cttctgccag	atgcagaaag	840
attcagtttt	cccagagtga	ttacttcagc	tgacggagct	actacatgg	acttcaatcc	900
agtgattctt	agaccaata	acgttgaaat	tgagtttctg	ctcaacggac	agatcattaa	960
tacttaccag	gcaagatttg	gaacgatcat	cgctagaaat	tttgatacaa	ttagactgtc	1020
atttcagctc	atgagaccac	caaacatgac	accagccgtc	gctgccctct	ttccaaatgc	1080
tcagccattt	gaacatcacg	caacagtggg	actcacgctt	agaattgaat	cagcagtggt	1140
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ggaatacggc	attccagttg	gaccagtttt	tccaccagga	atgcagtggg	ctgatctgat	1260
cactaactat	tcaccatcta	gagaggataa	cctccagcgc	gtgttttacag	tggtatccat	1320
tcgcagcatg	cttgtcaaat	gagcgcgc				1348

<210> 17

<211> 1061

<212> DNA

<213> Human rotavirus

<220>

<223> G9 strain 97CM113 outer capsid protein (VP7)

<400> 17

ggcttttaaaa	gagagaattt	ccgtctggct	agcggttatt	tccttttaaat	gtatgggtatt	60
gaatatacca	caattctaac	ctttctgata	tcaatagttt	tattgaacta	tatattaaaa	120
tcactaacta	gtgcgatgga	cttcataatt	tatagatttc	ttttacttat	tgttattgca	180
tcaccttttg	ttaaaacaca	aaattatgga	attaatttac	cgatcactgg	ctccatggat	240
acagcatatg	caaattcatc	acagcaagaa	acatttttga	cttcaacgct	atgcttatat	300
tatcctacag	aagcgtcaac	tcaaattgga	gatacggga	ggaaggatac	tctgtcccaa	360
ttattcttga	ctaaagggtg	gccaaactgga	tcagtctatt	ttaaagaata	caccgatatc	420

gcttcattct	caattgatcc	gcaactttat	tgtgattata	atgttggtact	gatgaagtat	480
gattcaacgt	tagagctaga	tatgtctgaa	ttagctgatt	taattctaaa	tgaatgggta	540
tgtaacccaa	tggatataac	attatattat	tatcagcaaa	cagatgaagc	gaataaatgg	600
atatcgatgg	gacagtcttg	taccataaaa	gtatgtccat	tgaatacgca	gacttttagga	660
atagggttgta	ttaccacaaa	tacagcgaca	tttgaagagg	tggtacaag	tgaaaaatta	720
gtaataaccg	atgttggtga	tggtgtgaac	cataaacttg	atgtgactac	aaatacctgt	780
acaattagga	attgtaagaa	gttgggacca	agagaaaatg	tagcgattat	acaagtcggt	840
ggctcagatg	tgtagatat	tacagcggat	ccaactactg	caccacaaac	tgaacgtatg	900
atgcgagtaa	attggaagaa	atggtggcaa	gttttctata	cagtagtaga	ttatattaat	960
cagattgtgc	aagttatgtc	caaaagatca	cggtcattaa	attcagcagc	tttttactat	1020
agggtttgat	atatcttaga	ttagaattgt	atgatgtgac	c		1061

<210> 18

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G9 strain 02-22 capsid protein VP7 gene

<400> 18

ggcttttaaaa	gagagaattt	ccgtctggct	agcgggttagc	tcctttttaat	gtatgggtatt	60
gaatataacca	caattctaac	ctttctgata	tcaatagttt	tattgaacta	tatattaaaa	120
tcactaacta	gtgcgatgga	ctttataatt	tatagatttc	ttttacttat	tggtattgca	180
tcactcttttg	ttaaaacaca	aaattatgga	attaatttac	cgatcactgg	ctccatggat	240
acagcatatg	caaattcatc	acagcaagaa	acattttttga	cttcaacgct	atgcttatat	300
tatcctacag	aagcatcaac	tcaaattgga	gatacggaat	ggaaggatac	tctgtcccaa	360
ttattcttga	ctaaaggggtg	gccaactgga	tcagtctatt	ttaaagaata	cactgatatc	420
gcttcattct	caattgatcc	acaactttat	tgtgattata	atgttggtact	gatgaagtat	480
gattcaacgt	tagagctaga	tatgtctgaa	ttagctgatt	taattctaaa	tgaatgggta	540
tgtaacccaa	tggatataac	attatattat	tatcagcaaa	cagatgaagc	gaataaatgg	600
atatcgatgg	gacagtcttg	taccataaaa	gtatgtccat	tgaatacgca	gacttttagga	660
atagggttgta	ttaccacaaa	tacagcgaca	tttgaagagg	tggtacaag	tgaaaaatta	720
gtaataaccg	atgttggtga	tggtgtgaac	cataaacttg	atgtgactac	aaatacctgt	780
acaattagga	attgtaagaa	gttaggacca	agagaaaatg	tagcgattat	acaagtcggt	840
ggctcagatg	tgtagatat	tacagcggat	ccaactactg	caccacaaac	tgaacgtatg	900
atgcgagtaa	attggaagaa	atggtggcaa	gttttctata	cggtagtaga	ttatattaat	960
cagattgtgc	aagttatgtc	caaaagatca	cggtcattaa	attcagcagc	tttttactat	1020
agggtttgat	atatcttagg	ttagaattgt	atgatgtgac	ca		1062

<210> 19

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G3 strain MaCH09004 outer capsid protein (VP7) gene,
complete cds

<400> 19

ggcttttaaaa	gagagaattt	ccgtctggct	agcgggttagc	tcctttttaat	gtatgggtatt	60
gaatataacca	cagtttttaac	cttttttgata	tcagttatat	tggtgaatta	cgtactcaaa	120
tccttaacta	gaataatgga	ctttattatt	tacagatttc	ttttaattat	agttatatta	180
tcaccactcc	ttaatgcaca	aaattatgga	ataaatcttc	cgattactgg	ctcaatggac	240
acaccatata	cgaactcaac	gcgagaggaa	gtattcctaa	cttcgacttt	atgtttgtat	300
tacccaactg	aagcagcaac	agaaataaat	gataattcat	ggaaggatac	actttctcag	360
ctatttttta	tcaaaggatg	gccaacagga	tctattttatt	ttaaagatta	tactgatatt	420
gcctcgtttt	cagtcgatcc	acaactgtat	tgtgattata	atttgggtatt	aatgaaatat	480
gacgctacac	tgcaactgga	catgtccgaa	ctagcagatt	tggtacttaa	tgagtgggta	540

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acgattcgaa	attgtaagaa	attaggacca	agggaaaacg	tagcagttat	acaggtaggt	840
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atgcgagtga	attggaagaa	atgggtggcaa	gtgtttttata	caatagttga	ctacgtgaat	960
caaattgtgc	aagcaatgtc	caaaagatcg	agatcattaa	attctgctgc	attttactac	1020
agagtataga	tatagcttag	attagaattg	tatgatgtga	cc		1062

<210> 20

<211> 981

<212> DNA

<213> Human rotavirus

<220>

<223> G12 VP7 gene for capsid protein, complete cds

<400> 20

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tatatattaa	aatcaataac	taatataatg	gacttttatca	tatatcggtt	tttactaata	120
gttgttgtca	tgctgccatt	tattaaagct	caaaattatg	gaataaatct	tccaataaca	180
ggttctatgg	ataccgcata	tacaaactcc	acacaacaag	agaattttat	gacttccact	240
ttatgcttat	attatccaag	ttcagtcacg	actgaaataa	ctgacccoga	ttggacgaac	300
acactgtcac	aacttttcat	gactaaagga	tggccgacaa	attccgtcta	cttcaagagt	360
tatgctgata	tagcgtcctt	ctctgtagat	ccgcagttat	attgtgatta	caatattgtg	420
ttagtacagt	acaaaaattc	attagcgttg	gatgtctcag	aacttgctga	tttaatttta	480
aatgaatgg	tatgtaatcc	gatggacgta	acgttgtact	attatcaaca	aacagatgaa	540
gogaataaat	ggatatcaat	gggagaatca	tgtacggtta	aagtatgtcc	cttaaataacg	600
caaacttttag	gaattggatg	tacaacaacc	gacgtcacaa	catttgaaga	ggtagcaaac	660
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actgaaagaa	tgatgcgaat	aaattggaaa	aatgggtggc	aggtgtttta	taccgtagta	900
gattacataa	atcaaatagt	tcaggtaatg	tccaaacgat	caagatcact	aaattcagct	960
gctttttact	acagaattta	g				981

<210> 21

<211> 1062

<212> DNA

<213> Human rotavirus

<220>

<223> G3 strain MaCH09404 outer capsid protein (VP7) gene, complete cds

<400> 21

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gaatatacca	cagtttttaac	cttttttgata	tcagttatat	tgttgaatta	cgtactcaaa	120
tccttaacta	gaataatgga	ctttattatt	tacagatttc	ttttaattat	agttatatta	180
tcaccactcc	ttaatgcaca	aaattatgga	ataaatcttc	cgattactgg	ctcaatggac	240
acaccatata	cgaactcaac	gcgagaggaa	gtattcctaa	cttcgacttt	atgtttgtat	300
tacccaactg	aagcagcaac	agaaataaat	gataattcat	ggaaggatac	actttctcag	360
ctatttttta	tcaaaggatg	gccaacagga	tctattttat	ttaaagatta	tactgatatt	420
gcctcgtttt	cagtcgatcc	acaactgtat	tgtgattata	atttggtatt	aatgaaatat	480
gacgctacac	tgcaactgga	catgtccgaa	ctagcagatt	tgttacttaa	tgagtgggtta	540
tgtaatccta	tggatattac	tttgtattat	tatcaacaaa	ctgatgaggc	aaataaatgg	600
atttcaatgg	gatcatcttg	tactataaag	gtatgtccac	taaatacgc	aacattagga	660

attgggtg	taacaactga	tacaaacacg	tttgaagaag	ttgcaacagc	tgaadaaaca	120
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acgattagaa	attgtaagaa	attaggacca	agggaaaacg	tagcagttat	acaggtaggt	840
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atgcgagtga	attggaagaa	atggtggcaa	gtgtttttata	caatagttga	ctacgtgaat	960
caaattgtgc	aagcaatgtc	caaaagatcg	agatcattaa	attctgctgc	attttactac	1020
agagtataga	tatagcttag	attagaattg	tatgatgtga	cc		1062

<210> 22

<211> 7

<212> PRT

<213> Artificial sequence

<220>

<223> HIV epitope

<400> 22

Arg	Thr	Pro	Lys	Ile	Gln	Val
1				5		

<210> 23

<211> 6

<212> PRT

<213> Artificial sequence

<220>

<223> HIV epitope

<400> 23

Glu	Leu	Asp	Lys	Trp	Ala
1				5	